

WHAT IS CLAIMED IS:

Sub A1 5
1. A water current measuring system comprising:
an ROV;
an ADCP coupled to the ROV; and
a computer system for receiving and processing ADCP data and ROV data and
displaying processed data in real time as the ADCP and ROV move through water;
wherein the processed data includes depth and heading data from the ADCP
data if such depth and heading data is of a sufficient quality.

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8. A method for processing water current measurements in real time, comprising the steps of:

receiving depth and heading data from ROV;

receiving from an ADCP water current velocity data associated with depth cells within a water column;

receiving depth and heading data from the ADCP if the depth and heading data of the ADCP is substantially free of interference;

processing the current velocity data from each depth cell into data associated absolute depth;

assigning absolute depth data to virtual bins;

processing the data for each bin, and

outputting the data at a regular interval.

9. The method for processing water current measurements of claim 8, further comprising the step of storing the depth and heading data received from the ROV or the ADCP.

10. The method for processing water current measurements of claim 8, further comprising the step of storing the current velocity data at a second regular time interval.

11. The method for processing water current measurements of claim 8, further comprising the step of manually stopping the gathering of data by the current profiler.

12. The method for processing water current measurements of claim 11, further comprising the step of storing the processed data for each bin.

13. The method for processing water current measurements of claim 8,

wherein the current profiler is rigidly attached to the ROV; and

wherein the face of the current profiler on which its acoustic transducers are forward-facing.

14. The method for processing water current measurements of claim 8,
wherein the current profiler is rigidly attached to the ROV; and
wherein the face of the current profiler on which its acoustic transducers are
attached is upward-facing.

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15. The method for processing water current measurements of claim 8, wherein
the step of outputting the data at a regular interval comprises the step of providing a graphical
display of the processed data.

GOVERNMENT EDITION

16. A method for measuring water currents in real time, comprising the step of receiving and processing data in real-time from an ADCP, including depth and heading data, as the ADCP is moving in the vertical direction through a water column.

5 17. The method of claim 16, wherein the ADCP is coupled to an ROV.

18. The method of claim 17 wherein the data is received and processed at a computer system remote from the ADCP.

10 19. The method of claim 17 wherein the step of processing the data comprises the step of converting data from the frame of reference of the ADCP to a fixed frame of reference.

15 20. The method of claim 17,
wherein the data is received and processed at a computer system remote from
the ADCP; and
wherein the step of processing the data comprises the step of converting data
from the frame of reference of the ADCP to a fixed frame of reference.

20 21. The method of claim 20, wherein the data received by the computer system for processing includes data indicative of the water current velocity in the profiling range of the ADCP.

25 22. The method of claim 20, wherein the data received by the computer system for processing includes data indicative of the water current heading in the vicinity of the ADCP.

23. The method of claim 20, further comprising the step of presenting a graphical display of the water current velocity through the water column.